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INFORMATION REPORT INFORMATION REPORT

CENTRAL INTELLIGENCE AGENCY

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COUNTRY East Germany

REPORT

SUBJECT Planned V-60 Telephone Lines
up to 1962

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SOURCE EVALUATIONS ARE DEFINITIVE. APPRAISAL OF CONTENT IS TENTATIVE.

SUBJECT: V-60 Lines to 1962
Three Attachments

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Attachment 1 planned V-60 lines up to 1962.
The number of V-60 lines possible by 1962 will be limited by the following: 50X1-HUM

1. by the capacity of the equipment in the Berlin-Lichtenberg Repeater Station (VerstA = Verstärkeramt) until the new building is finished;
2. by the number of pairs of the TF-Kabel (Trägerfrequenz-Kabel = carrier-frequency cable); with the use of V-120 after 1962 and the completion of the West Ring, Magdeburg-Leipzig, the circuits

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of the cables previously laid will be opened up again;

3. by the funds available;

4. by the production capacity of the manufacturing plants.

In equipping the V-60 lines, an effort must be made to use the channels as much as possible for automatic dialing and for switchboard operator dialing. In this way it will not be necessary to procure TRU (Tonfrequenzrufumsetzer - audio-frequency transposer), RRS (Rufrelaisatz - ringing relay set), and Gabel-41 (cradle switch mounting, type 41) because such equipment is already in use.

1. All the channels which can be used by the technical central distributor trunk office (KA-Technik - Knotenamt-Technik) can be equipped with the automatic dialing system; for example, circuits between central distributor trunk offices (KA - Knotenämter of the Bezirk capitals, including Berlin, can be so equipped. For these connections to the dial system, the number of circuits must be so allocated that no back-kicks (Rückschläge) occur because of lines frequently being busy after the direct distance dialing service (SMFV - Selbstwahlfernverkehr) has been initiated. A basis for allocating the several central distributor trunk office lines (KA-Maschen) is given by the traffic plans

In these plans, the numbers of lines¹ from the Berlin Main Exchange (HA - Hauptamt), which are specified under (Section) 3 covering connections between central distributor trunk office and a main exchange in another city (Verbindungen KA - fremdes HA), are to count as separate central distributor trunk office circuits. 50X1-HUM

The newly developed TF-Gabel-Umsetzer (Trägerfrequenz-Gabel-Umsetzer-carrier-frequency duplexing transposer), with 12 transposers in one frame, can be set up in the new TF-Amt (Trägerfrequenzamt - carrier-frequency station) at the time when the cables are laid in the city area.

2. The channels which cannot be utilized for the automatic dialing system should be equipped for switchboard operator dialing. For this purpose the same carrier-frequency transposers will be used as for the automatic dialing system. Moreover, there is another pre-transposer (Vorumsetzer) on the outgoing side to match trunk position 36 (Fernplatz 36, which also switches two long-distance circuits (VL - Verbindungsleitungen) into the four-wire cable of the carrier-frequency transposers for through connections. The carrier-frequency duplexing transposer works on a selector on the incoming side. The trunk position will be reached over position 0 on the stepper switch. No trunk circuits for further long-distance connections, however, can be dialed at the originally selected trunk position.² (If enough circuits are available from the Main Exchange to the central distributor trunk office, the switchboard in the section which they were trying to reach (Zielbereich) can dial through to the central distributor trunk office. Up to 1965, however, this will be possible on the Bezirk level only in exceptional cases, because of the shortage of carrier-frequency channels. Dialing through is, therefore, to be limited to connections where the attenuation between one terminal exchange and another terminal exchange (EA - EA = Endamt - Endamt) does not exceed 2.2 N(ebers). All terminal exchanges (EA - Endämter) in the area covered by the central distributor trunk offices can be reached by switchboard operator dialing.)

From the exposition above, it is clear that, if through traffic at the outgoing exchange is very heavy, the carrier-frequency transposers at trunk position 36 must be increased in number.

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Pre-transposers for switchboard operator dialing:

541 S 2501 Trunk position 36

541 S 602 Trunk position 27

The number of switchboard operator dialing circuits and of existing ringing circuits between the Bezirk capitals should be at least high enough so that the necessary principal long-distance circuits are available to cope with the expected traffic.

3. If only the principal long-distance circuits now existing should be replaced by V-60 channels, the existing Gabel-41 equipment and the ringing relay sets for direct current could still be used after being rebuilt. A larger number cannot be operated with carrier-frequency transposers in a V-60 system, because the calling level (Rufpegel) at the height of the normal level (Messpegel) could lead to higher noise voltages.
4. In order to save the cost of 2 x 23,000 DM for the corresponding inserted chassis (Einschübe) in the channel transposer board (Kanalumsetzer-Schrank), in carrying over 12 carrier-frequency channels into a second line by V-60 system, the connection hereafter should be made over the basic group (60 ... 108 kilocycles per second). According to Attachment 1, some through connections without filters were provided in the Plan. The adjacent groups were thus kept free on one line, in order to avoid cross-talk interference. For the further connection of the four-wire channel outlets of a V-60 terminal to another system, two calibrated lines (Eichleitungen) of three N(epers)(Z - 600 ohms) must be switched into each channel, and the tone-signal lines must be switched through. If the tone-signal lines are not available for further switching, it will be necessary to operate with audio-frequency transposers (TRU).
5. V-60 Systems at the Bezirk Level

With the further expansion of the carrier-frequency cable net, central distributor trunk offices in Kreis capitals will be connected with the Bezirk capital over carrier-frequency four-wire ground lines; examples are Stralsund, Greifswald, Burg, Fürstenwalde, Zwickau, Jena, and Weimar. The use of V-60 systems is more economical by 48 channels than the use of Z-12 systems, if one takes account of the basic equipment already available in the Main Exchange. The BPF, therefore, must check each case, and the AfF (Amt für Fernnetze) must cooperate, to see whether lines should be reserved for this purpose in the long-distance cable. In addition, the question must be settled as to whether or not the V-60 equipment for the Bezirk level can be delivered in due time by the factory.
6. According to the order of the MPF (Ministry of Post and Telecommunications) Fe Fn 3 (5) No. 176, dated 7 September 1959, the necessary transposers for the V-60 lines up to (and including) 1962 are to be procured by the BPF for 1961 and 1962 from the Office for Material Procurement, so that the production of this equipment can be assured. In Attachment 2, there is a list of the various V-60 lines and a statement of what use of the channels will be reserved for the transposers. The transposers listed in Columns 1, 2, and 3 of Attachment 2 for the individual lines are so allocated that the use of channels is assured for every case.

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One year before going into operation, a decision can be made as to whether the number of line cables must be increased with a concomitant decrease of direct distance dialing circuits. As for carrier-frequency channels, which are not being equipped with a selection transposer (Wahlum-setzer), it will readily be seen that these will be connected with existing or available equipment in the repeater stations of the Bezirk capitals.

The prerequisite for commencing operation of the carrier-frequency channels is that a quite considerable number of cable conductors between the TF-Amt (Trägerfrequenz-Amt - carrier-frequency station) and the central distributor trunk office, i.e. between the central distributor trunk office and the intermediate stations in the city area be made available.

MPF, IPF, PB (Planungsbüro - Planning Office) of the DP (Deutsche Post), and AfM (Amt für Materialversorgung - Office for Material Procurement) have each received a copy of the present memorandum. A plan, consonant with Attachment 1, will be drawn up here (AfF) for a V-60/120 system in the carrier-frequency cable network by the end of 1965, and after the plan has been prepared it will be sent to the several BPFs for their information.

☐ Comment: By numbers of lines is meant, for example, 50 lines from the Berlin Main Exchange to another Main Exchange, 35 from Berlin to still a different Main Exchange, etc.

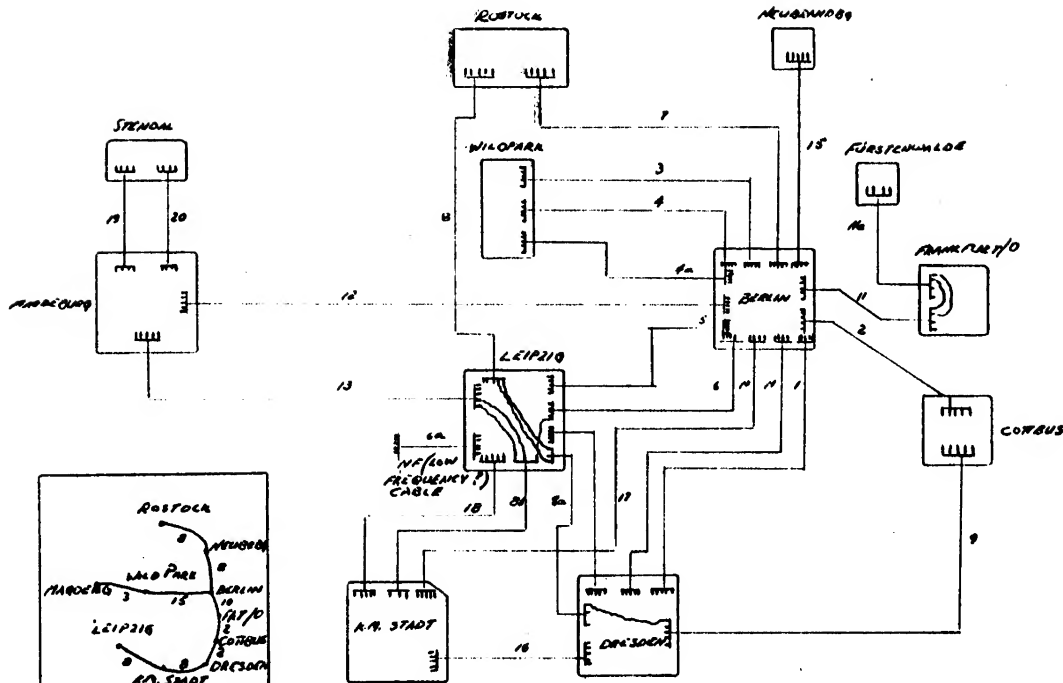
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ATTACHMENT 2

Circuit of the Cable Wires

— = 601-SYSTEM WITH 5 BASIC GROUPS

— = THROUGH CONNECTION of a BASIC GROUP

No. 1 to 4 MID 1960 (No. 4 WITHOUT CHANNEL TRANSPOSER BOARDS)

No. 5 to 6 END 1960

No. 7 to 10 1961 (No. 9a WITHOUT CHANNEL TRANSPOSER BOARDS)

No. 11 to 20 1962

V60 - SYSTEMS
TO THE END OF 1962

REPLACEMENT FOR 100/59

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Attachment 3

Method of Operation Provided for the V-60 Channels to 1962
to Determine the Necessary Selection Transposers
(Going and Coming Each Have Half of the Lines Given Below)

	Direct Dis- tance Dialing	Switchboard Operator's Dialing	
1. Berlin - Dresden	60		Audio Frequency Selection Equipment Invest. AfM
2. Berlin - Cottbus	24	16	
3. Berlin - Wildpark			Replacement for Coil Removal and Circuits for Radio Installa- tions
4. Berlin - Wildpark			Reception from V-12 Systems
5. Berlin - Leipzig	50	10	
6. Berlin - Leipzig	48		
6a. Leipzig - Halle	60		
7. Berlin - Rostock	36	12	
8. Rostock - Leipzig	16	8	
Rostock - Dresden		10	
Rostock - K. M. -Stadt		10	
9. Cottbus - Dresden	24	16	
10. Berlin - K.M.-Stadt	36	20	
11. Berlin - Frankfurt		20	
12. Berlin - Magdeburg	48	12	
13. Magdeburg - Leipzig	24	12	
Magdeburg - Dresden	12		
Magdeburg - K.M.-Stadt	11		
14. Berlin - Dresden	20	20	
15. Berlin - Neubrandenburg	16	12	
16. K.M.-Stadt - Dresden	60		
17. Leipzig - Dresden	60		
18. Leipzig - K.M.-Stadt	60		
19. Magdeburg - Stendal	12/20	12	
20. Magdeburg - Stendal			

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